French Republic
Ministry of Industrial Production
Industrial Property Service

Patent
Gr. 9.--Cl. 2
No.: 921,069

Improvements to locks and to their strike plates to make them impregnable

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Application filed October 23, 1945, 4:08pm, in Paris.
Granted January 10, 1947. Published April 25, 1947.

(Patent whose granting was delayed in compliance with Art. 11, §7 of the Law of July 5, 1944, modified by the Law of April 7, 1902).

It is known that locks, in particular those mounted on outside doors (doors of apartments, houses, villas, stores, etc.) can be forced by introduction, between the lock per se and the strike plate, of the end of a breaking and entering tool such as a crowbar which is used as a pivoting lever to drive apart the lock and the strike plate in question.

The object of the present invention is the new industrial product which comprises an improved lock and strike plate which makes it possible to avoid the aforementioned disadvantage, with the new lock characterized essentially in that the visible face of the box has, on its side where the bolts emerge, an extension which terminates in a open tongue bent at a right angle penetrating into a slot provided on the corresponding face of the strike plate, with said orifice of the tongue enabling the engagement of the dead bolt at the time of double locking. Under these conditions, a part of the strike plate is "imprisoned" so-to-speak by the bolt and by the tongue, which results in the fact that any fraudulent pressure exerted on the outside of the door to separate the lock and the bolt is fruitless.

According to another characteristic of the invention, the strike plate has a shank with a pointed end riveted with a certain degree of angular freedom on the face provided with holes for the bolts, a shank which is designed to be introduced into a seat drilled in the door frame and which, in the event of attempted breaking and entry, strongly reinforces the mounting screws of the strike plate which tend to cause the wood to splinter.

The drawings schematically depict, by way of a nonrestrictive example, an embodiment of the new lock with its strike plate improved according to the invention:

Fig. 1 is a perspective view of the lock and its strike plate separated from each other;

Fig. 2 is a top view of the lock with a partial cutaway of the strike plate, with the dead bolt retracted;

Fig. 3 is a view similar to the preceding view, but with the dead bolt engaged in the strike plate, and with a breaking and entering tool (such as a crowbar) engaged between the aforementioned lock and strike plate.

As can be seen in the drawings, the box 1 of the lock has, on the side facing the strike plate, an extension 2 of the visible side of said box, an extension which terminates in a tongue 3 with an opening 3' and which tongue is bent at a 90° angle so as to be parallel with the face 4 of the box, the face from which the dead bolt 5 and the half-turn bolt 6 emerge.

The strike plate 7 has on its face 8 (adjacent to that presenting the openings designed to accommodate the two bolts) a slot 9 designed to accommodate the open tongue 3.

The dead bolt has a countersunk groove 10 (see Fig. 3) the utility of which will be presented below.

Finally, the face of the strike plate 7 presenting the bolt holes has, riveted with a certain degree of angular freedom, a shank 11 ending in a point 12. To attach the strike plate, a more or less oblique channel is drilled in the upright of the door frame (depending on the thickness of the upright of the door frame), with the seat thus created having a depth which corresponds essentially to the cylindrical part of the shank 11. At the time of the installation of the strike plate, the shank 11 is forcibly driven into the end of its seat.

When the door is closed, the tongue 3 of the box of the lock engages as shown in Fig. 2 in the slot 9 of the strike plate 7, with the half-turn bolt acting as usual. When, by operating the key, the dead bolt 5 is double locked, the dead bolt is not only engaged in the corresponding opening provided in the strike plate but also in the opening 3' of the tongue 3.

Then, if, as is depicted more specifically in Fig. 3, one attempts to force the door equipped with the new lock by inserting the end of a breaking and entering tool (for example, the end of a crowbar) between the lock and its strike plate to try to separate them from each other, and thus to obtain the forced opening of the door, the strike plate cannot be separated from the lock. If the breaking and entering force is increased, the deformation imposed on the tongue 3 causes this to engage with the groove 10 of the dead bolt 5, which further reinforces the union of the lock and the strike plate.

Also, thanks to the presence of the shank 11 deeply anchored in the wood, it becomes impossible to pop out the strike plate, a fact which would not be the case if this were simply attached by the usual screws, whose action would cause the cutting of the wood, its splintering, and the removal of the part of the door frame in which the screws in question are engaged.

Of course, the example of the embodiment of the improved lock and strike plate constituting the object of the invention, the example described above and depicted in the annexed drawings, is presented merely as a nonrestrictive example and it is possible to apply any modification in the details without going outside the spirit of the invention.

SUMMARY

The object of the present invention is the new industrial product which constitutes a lock with its strike plate improved to counter breaking and entering, with the new lock and its strike plate presenting, to that end, the following characteristics in isolation or in combination:

1. The visible face of the box of the lock has, on the side where the dead bolt and the half-turn bolt emerge, an extension terminating in a tongue provided with an opening and which tongue is bent at a right angle (i.e., parallel to the face where the bolts emerge from the box), with the dead bolt provided, on its face turned toward the outside, with a countersunk groove;

2. The strike plate has, on the face adjacent to that with the holes designed to accommodate the bolts of the lock, a vertical slot for introduction of the open tongue specified under no. 1, with the hole provided in the tongue in question large enough to permit the introduction of the end of the dead bolt whose countersunk groove can, in the event of force caused by breaking and entering, engage with the edge of the opening in the tongue in question;

3. The strike plate has, on the face which presents the holes designed to accommodate the bolts of the lock, a shank with a pointed end riveted, with a certain degree of freedom, on said face and designed to be engaged, at the time of the attachment of the lock on the door frame, inside a seat drilled at more or less of an angle depending on the thickness of the wood.

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